



## Supplemental Materials Packet

### Includes:

#### **Day 2 – Wednesday, June 4**

- Detailed Agenda & Supplemental Information for “Standardized Water Quality Assessment Methodology” (AM session)
- Detailed Agenda for “Developing an Effective Outcome Based Monitoring and Assessment Program for West Maui” (PM session)

#### **Day 3 – Thursday, June 5**

- Detailed Agenda for “Getting from TMDL & Watershed Based Plan Hybridization to a ‘TMDL+’ ” (AM session)



**Standardized Water Quality Assessment Methodology – Detailed Agenda**

**Day 2 (Wednesday, June 4): 8:30-11:45 am**

- **Purpose:** Define a standardized methodology to evaluate water quality data for the purposes of CWA § 303(d) listing/delisting, water quality-based NPDES permitting requirements (i.e., reasonable potential analysis, assimilative capacity and dilution credits, antidegradation), nonpoint source program targeting and effectiveness and other program use.
- **Outcome:** Better understanding of how the Water Quality Standards (WQS) are applied for assessment purposes.
- **Output:** Methodology that answers the question: Are the WQS being met? The applications may be specific, but the method to calculate whether WQS are being met is the same.

**1. Part 1: Discussion (8:30-9:00 am)**

*Randee Tubal, DOH Clean Water Branch*

- a. Hawaii WQS Background – Which waterbody types are included in the WQS (HAR Ch. 11-54)?
  1. Types of marine waters
  2. Future consideration of watershed link to inland waters
- b. How do we define decision units (DUs)?
  1. By water body type – current/ proposed DUs
  2. Applicable standards – Recreational, Biogeochemical parameters, Toxics
  3. Brief description of current and proposed DUs
- c. Identify assessment needs and factors to consider:
  1. What is representative of the condition (attainment or nonattainment)
  2. Vary by pollutant, current, depth
  3. Where there are multiple monitoring stations within the DU, should those be considered separately, or averaged together? Would the unit be different for NPDES purposes?
  4. What timeframe of data collection should be considered? Should this be seasonal? Does it vary by pollutant?
  5. What sources of data can be considered?
  6. How should the data be compared to the WQS?
    - a. Where the WQS indicates a geomean or other statistically-based period (10% of the time, 2% of the time), should we calculate the data and compare directly?
    - b. For those WQS without these statistically-based periods, how should the comparison be performed? Would there be an exceedance allowance? If so, would that meet NPDES requirements?

**2. Part 2: Practical Application & Case Studies – Hanalei & Integrated Report (9:00-10:00 am)**

*Allison Nunnally, DOH Clean Water Branch*

- a. Current assessment methods for calculating water body status (IR): Apply method to assess third party data for Hanalei and compare results to current 303(d) listing.
- b. How would we do this differently applying the proposed method for IR assessments? Are there factors to consider that might be a problem?



**BREAK (10:00-10:15 am)**

**3. Part 3: Practical Application & Case Studies – NPDES Permits (10:15-11:40 am)**

*Elizabeth Sablad, EPA Permits Office; Shane Sumida & Randee Tubal, DOH Clean Water Branch*

- a. NPDES permitting assessment applications: Define reasonable potential analysis, assimilative capacity and dilution credits, antidegradation
- b. NPDES permitting assessments: Current assessment methods for calculating RP and assimilative capacity
- c. Apply proposed method to evaluate nutrient assimilative capacity for a recently issued NPDES permit: Honouliuli

**4. Closing Remarks/ Open Discussion (11:40-11:45 am)**

*Randee Tubal, DOH Clean Water Branch*



### **Standardized Water Quality Assessment Methodology – Supplemental Information**

Coastal decision units (DUs) are defined by: State watershed delineations (about 580 watersheds statewide), land use, geographical features, and distance from shoreline. Application of standards depends on water body type (oceanic, open coastal, embayment) and distance from shoreline (near shore versus off shore open coastal). Marine DUs are divided into: 1) near shore open coastal - stations within 300 m of shoreline, 2) offshore open coastal - stations >300 m of shoreline bounded by the 183 meter/ 100 fathom depth contour, 3) oceanic - all other marine waters outside of the 183 meter depth contour. Embayments identified in HAR Ch. 11-54 are considered a separate decision unit. (see map below)

Currently, only ten samples collected over a two year timeframe are required to assess a water body for Integrated Report purposes. See current methodology used in the draft 2014 Integrated Report (IR) (Figure 1 and sections B.2 Assessment Methodology, B.2.3 Ecosystem Health Assessment).

For upcoming assessments:

1. Nutrient assessments: DUs with NPDES permits/ discharges will require a minimum of 30 control station samples collected per year to conduct assessment of receiving waters (~60 samples for the IR assessment period). Some permitted facilities are currently not meeting the 10 sample minimum for nutrient assessment (e.g., Papaiko WWTP, Kulaimano WWTP, Waialua WWTP, Shipman Generating Station, Waikiki Aquarium, Agribusiness Dev. Corp.). We either need to combine this data with DOH stations and/or have these facilities sample more frequently to meet the minimum criteria. It would help if the receiving water quality data were in an electronic format and sent to CWB regularly as part of the Discharge Monitoring Reports (DMRs) submittals. A template for data submittal can be provided if necessary.

DUs without NPDES permits require a minimum of 30 samples collected over the two year (~15 samples/per year) data collection timeframe (IR assessment period) to make assessment.

2. Bacteria assessments: Keep current methods (see section B.2.2. Recreational WQ Assessment in draft 2014 IR).

Timeframe is specific for the purpose of the assessment. IR assessments use two years' worth of data, while assessments for permit applications may require annual or quarterly assessments.

Data collection should be representative of wet (November through April) and dry seasons (May through October) even though the seasonal wet and dry criteria for marine waters are not directly dependent on calendar year, as is the case with inland waters. Data collection should be consistent for all conventional pollutants.

Sources that can be considered for receiving water body assessments include data collected by DOH, assisted monitoring groups, control station DMR data, and data provided by any other entities with an approved QAPP (or something equivalent). For more information on data sources, see Appendix B of the draft 2014 IR.

Nutrient assessments for receiving water quality and the IR are based strictly on the geomean. The 10% and 2% nutrient criteria can be applied when assessing zone of mixing (ZOM) or other permit related data. Bacteria assessments apply only the geomean when sufficient data are available. When there are less than five samples collected within a 25-30 day timeframe, a 10% exceedence of the single sample maximum (104 CFU) is allowed for the entire dataset. Note that the "single sample maximum" is proposed to be substituted with the statistical threshold value (STV) during the next round of standards review and amendments to be consistent with the EPA's 2012 Recreational Water Quality Criteria.



Ten percent and 2% nutrient criteria should be applied for permitting considerations or ZOM assessments. The IR uses the geometric mean with no consideration of the 10% criteria for nutrients.

Assessments are not usually performed for the WQS that do not have statistically based periods (pH, DO, temperature, salinity). However, if we were to assess these parameters, we would calculate a straight average. In the 2014 draft IR, we assessed pH by calculating an average for all of the pH values by station and compared it to the applicable ranges provided in HAR Ch. 11-54 (see below). This assessment was performed in response to a request from the Center for Biological Diversity (CBD) related to the 2012 IR.

**Estuaries (except Pearl Harbor)**-According to HAR § 11-54-5.2(d)(1), pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 7.0 nor higher than 8.6.

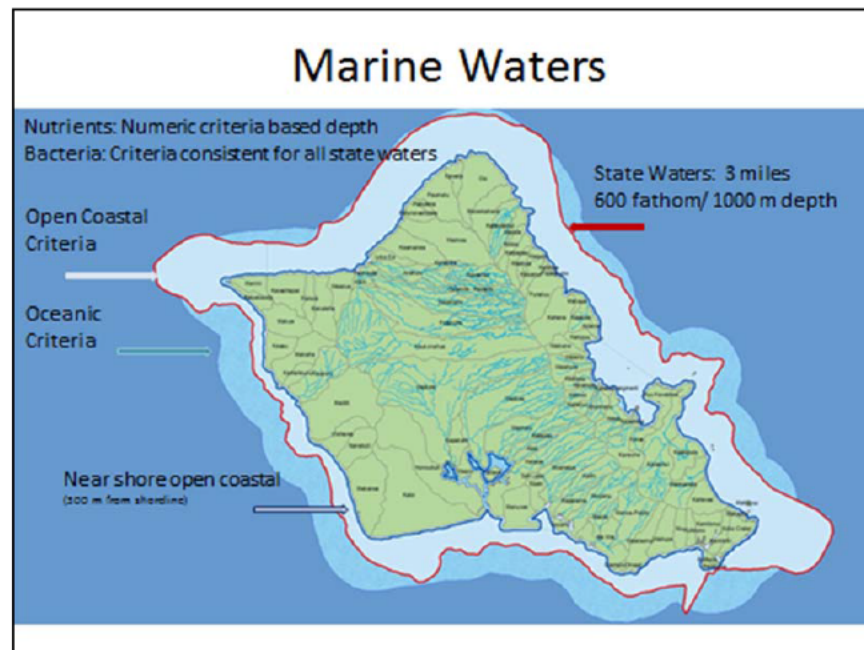
**Pearl Harbor Estuary**-According to HAR § 11-54-5.2(d)(2), pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 6.8 nor higher than 8.8.

**Embayments**-According to HAR § 11-54-6(a)(3), applicable to both “wet” and “dry” conditions, pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.

**Open coastal waters**-According to HAR § 11-54-6(b)(3), applicable to both “wet” and “dry” conditions, pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.

**Oceanic waters**-According to HAR § 11-54-6(c)(3), pH units shall not deviate more than 0.5 units from a value of 8.1.

**Kona Coast**-According to HAR § 11-54-6(d), pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.





**Developing an Effective Outcome Based Monitoring and Assessment Program for West Maui – Detailed Agenda**

**Day 2 (Wednesday, June 4): 1:00-4:00 pm**

**Purpose:** *Develop monitoring plan/approach for 5 West Maui watersheds which will allow us to: 1) reevaluate West Maui water quality assessments; 2) establish baseline to evaluate implementation of West Maui watershed plans; and 3) provide data to refine necessary implementation actions.*

**1. Part 1: What are we trying to achieve in West Maui? (1:00-1:30 pm)**

*Tina Yin, EPA Watersheds Office; Hudson Slay, EPA Pacific Islands Contact Office*

- a. What is nature of problem? What is focus of our efforts?
- b. Establishing watershed goals: Qualitative and quantitative approaches to assess watershed health. Are there other parameters to consider when looking at ecosystem health? How do we measure ecosystem health? What role does surface and ground water quality play in achieving these goals?
- c. What role do the DOH programs (WWB, SDWB, CWB, etc.) play in achieving the watershed goals?
- d. How well do our plans identify pollution sources in the watershed? Does it focus implementation? Monitoring feedback/adaptive management loop?
- e. What does success look like?
- f. Can we establish timeframes for restoration? Do we need to consider ecosystem and/or indicator response? How much time does it take to collect/analyze adequate data?

**2. Part 2: Defining Current Water Quality Conditions and Data Sources (1:30-2:30 pm)**

*Scott Murakawa, DOH Clean Water Branch; Hudson Slay, EPA Pacific Islands Contact Office; Elizabeth Sablad, EPA Permits Office; Darryl Lum, DOH Clean Water Branch; Norris Uehara, DOH Safe Drinking Water Branch; Kate Rao, EPA Ground Water Office*

- a. Monitoring approach in West Maui: monitoring station locations, parameters monitored, frequency; current impairments (locations, severity, rationale etc.).
- b. Sources of information to assist with decision making: What activities do we influence that can be sources of data? What can we require?
  1. Complementary West Maui data
  2. NPDES permits
  3. Watershed Plan implementation strategy and project funding
  4. Lahaina Wastewater Reclamation Facility/UIC Permit
  5. Ground Water and Drinking Water program/funding tools

**BREAK (2:30-2:45 pm)**

**3. Part 3: Moving from current approach to regional monitoring approach (2:45-4:00 pm)**

*Randee Tubal & Scott Murakawa, DOH Clean Water Branch; Janet Hashimoto, EPA Monitoring & TMDL Office*

- a. Application of new water quality assessment method to West Maui watersheds (decision unit delineation, # samples, current assessment condition, etc.) emphasis on using WQ data from both DOH and non-DOH sources to better assess decision units.





- b. Overview of examples of effective Regional Monitoring Approaches in Mamala Bay/Socal as they pertain to surface water quality (include data management/analysis options for RMAs). Options for coordinating with County of Maui and other entities to design and implement a monitoring strategy.
- c. Group discussion--Developing a Regional Monitoring Approach/Plan for West Maui—When might this type of approach be viable in West Maui? What does it look like? What type of regional monitoring can we do in the interim to help assess waters and evaluate watershed plan implementation? Can we define an approach/plan that will provide data to answer multiple questions?
  - 1. What is current water quality condition of decision unit (old and new) relative to water quality standards?
  - 2. Establish current/baseline conditions to allow for evaluation/refinement of watershed plan implementation.



**Getting from TMDL & Watershed Based Plan (WBP) Hybridization to a “TMDL+”**

**Day 3 (Thursday, June 5): 8:30-11:45 am**

**Goals:** Identify needs for all Clean Water Branch (CWB) sections to implement a TMDL+. Decide criteria for prioritizing TMDL+ schedule. Create “master” checklist that meets needs of WBP/ TMDLs. Develop watershed priority list.

**Part 1: Getting from TMDL & WBP Hybridization to a “TMDL+” (8:30-10:00 am)**

**1. Review 9 Key Elements of a WBP (8:30-8:45 am)**

*Tina Yin, EPA Watersheds Office; Hudson Slay, EPA Pacific Islands Contact Office*

- Intro to WBPs and 9 key elements
- Why are WBPs important to the CWB and Polluted Runoff Control Program
- Hawaii Plans: strengths and weaknesses of local plans

**2. TMDL Methodology (8:45-9:00 am)**

*Janet Hashimoto, EPA Monitoring & TMDL Office*

- Intro to TMDLs and checklist (13 parts to TMDL)
- What makes a good TMDL? Where are Hawaii’s TMDLs lacking?

**3. TMDL & WBP Hybridization Exercise (9:00-9:30 am)**

*Greg Takeshima & Randee Tubal, DOH Clean Water Branch*

- Exercise: WBP 9 key elements and TMDL checklist overlap

**4. Hanalei Watershed Example (9:30-10:00 am)**

*Group discussion facilitated by Greg Takeshima, Randee Tubal, and Hudson Slay*

- Hanalei Bay Watersheds: What’s missing from Hanalei Bay TMDL to make it a TMDL+? What can we take from updated Hanalei WBP to use in a TMDL+? How would DOH implement TMDL/WBP given what is called for in each plan?

**BREAK (10:00-10:15 am)**

**Part 2: TMDL+ Implementation and Watershed Prioritization (10:15-11:45 am)**

*Group discussion facilitated by Greg Takeshima & Randee Tubal*

**1. Incorporate elements of vision for 303(d) program.**

**2. What do all CWB sections need for plan implementation?**

- Waste Load Allocations (WLAs): Want load/discharger and ways to demonstrate compliance with the WLA. Is compliance demonstrated via end of pipe monitoring, or some other way? Compliance with WLA needs to be consistent with how TMDL was developed. How do permit writers express load reductions from WLAs?
- Can this approach be used for load allocations (LAs)?
- What is an ideal implementation strategy for each CWB section?

**3. Discuss and determine criteria necessary for prioritization of watersheds to apply TMDL+**

- An ideal watershed would have both point and nonpoint sources in it
- Considerations: Community involvement; potential for collaborating with external programs such as UH, watershed partnerships and groups, other government agencies; potential for improvement and/or delisting; existing WQ data for area; high recreational use areas; current restoration efforts; etc.

**4. Develop a short watershed priority list? Are there any other water bodies that we may want to target not listed on IR? Why?**